

Gold King Elevation Notes

Description	Elevation	Notes
Goff East Control Point, WP-1 1" CAP GOFF	11438.13	Replacement point by Goff after FNDSOC-2.75BC M&G was destroyed
GCP 1	11310.77	By guard shack on road to Gold King
GCP 3	11714.59	On hill well above portal
BM-1	11443.75	#6 rebar on flat spot to left of portal
BM-2	11449.13	split set in right rib near station 0+07
Top of Timber (now removed)	11447.03	timber was removed
Roof at second brow (sta 0+56)	11448.53	Estimated based on top of timber elevation
Bolt (now removed)	11439.69	bolt was removed
Floor of mine below BM2	11436.89	Dug out slop from floor and re-surveyed
Elevation drop Pipe invert below floor of mine		
Mine box invert maximum	11436.30	
Pipe length from mine box to manhole	83.00	Weston Design
Slope of pipe from mine box to manhole	0.015	Weston Design
Elevation drop from mine box to manhole	1.25	Weston Design

Distribution Manhole	As-Built 10/22/15 Elevation	Notes
Top of Manhole	11438.06	Manhole Lid
Manhole inlet invert	11435.06	3.995' above bottom of manhole base
Manhole Overflow Invert	11434.06	
Manhole discharge invert	11432.56	
Manhole Base Invert	11431.06	
Pipe length from manhole to valve	20.00	
Slope manhole to valve pipe	0.03	
Elevation drop from manhole to valve		
Elevation of valve invert needed		

Original Goff East control point had been destroyed and replaced a new point nearby but 1.75 ft lower  
ITC and Goff are now on same Datum and coordinate system.  
ITC tied into Goff Control Points GCP 1 and GCP 3

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Bolt (now removed)	11439.69	bolt was removed
Floor of mine below BM2	11436.89	Dug out slop from floor and re-surveyed
Elevation drop Pipe invert below floor of mine	1.92	Suggest lowering sump
Mine box invert	11434.97	Weston Design with lowered sump
Pipe length from mine box to manhole	78.00	Weston Design
Slope of pipe from mine box to manhole	0.01	Weston Design
Elevation drop from mine box to manhole	0.78	Weston Design

Distribution Manhole	As-Built 10/11/15 Elevation	Notes
Top of Manhole	11437.18	Assume upper manhole built per design
Manhole inlet invert	11434.19	3.995' above bottom of manhole base
Manhole inlet invert to discharge pipe invert	2.02	
Manhole discharge invert	11432.17	Surveyed as-built elevation
Pipe length from manhole to valve	20.00	
Slope manhole to valve pipe	0.03	
Elevation drop from manhole to valve	0.60	
Elevation of valve invert needed	11431.57	
Actual Valve invert 10/10/2015	11435.70	
Difference	4.13	Valve will be/was lowered

## Notes

Based on as built manhole at installed elevations

Very shallow pipe

Grading top of waste pile may require hump over pipe and manhole

Original Goff East control point had been destroyed and replaced a new point nearby but 1.75 ft lower

TCI and Goff are now on same Datum and coordinate system.

TCI tied into Goff Control Points GCP 1 and GCP 3

# Gold King Elevation Notes

Description	Elevation (TCI revised)	Elevation (Goff)	Notes
Goff East Control Point	11438.13	11439.88	1.75 New correlation Goff-TCI
BM-1	11443.75	11445.50	
BM-2	11449.13	11450.88	On plate in adit rib
Top of Timber (now removed)	11447.03	11448.78	
Bolt	11439.69	11441.44	
Floor of mine below BM2	11436.89	11438.64	Dug out slop from floor and re-surveyed
Elevation drop Pipe invert below floor of mine	1.92	1.92	Suggest lowering sump
Mine box invert	11434.97	11436.72	
Pipe length from mine box to manhole	78.00	78.00	Weston Design
Slope of pipe from mine box to manhole	0.01	0.01	Weston Design
Elevation drop from mine box to manhole	0.78	0.78	Weston Design

Distribution Manhole	As-Built 10/11/15		Notes
	Elevation (TCI revised)	Elevation (Goff)	
Top of Manhole	11437.18	11438.93	Assume upper manhole built per design
Manhole inlet invert	11434.19	11435.94	3.995' above bottom of manhole base
Manhole inlet invert to discharge pipe invert	2.02	2.02	
Manhole discharge invert	11432.17	11433.92	Surveyed as-built elevation
Pipe length from manhole to valve	20.00	20.00	
Slope manhole to valve pipe	0.03	0.03	
Elevation drop from manhole to valve	0.60	0.60	
Elevation of valve invert needed	11431.57	11433.32	
Actual Valve invert	11435.70	11437.45	
Difference	4.13	4.13	Valve will be/was lowered

## Notes

Based on as built manhole at installed elevations

Very shallow pipe

Grading top of waste pile may require hump over pipe and manhole

Gold King Elevation Notes

Description	Elevation (TCI revised)	Elevation (Goff)	Notes
Goff East Control Point	11438.13	11439.88	1.75 New correlation Goff-TCI
BM-1	11443.75	11445.50	
BM-2	11449.13	11450.88	On plate in adit rib
Top of Timber (now removed)	11447.03	11448.78	
Bolt	11439.69	11441.44	
Floor of mine below BM2	11437.67	11439.42	
Elevation drop Pipe invert below floor of mine	1.32	1.32	pipe diameter + grate (Weston Design)
Mine box invert	11436.35	11438.10	
Pipe length from mine box to manhole	78.00	78.00	Weston Design
Slope of pipe from mine box to manhole	0.01	0.01	Weston Design
Elevation drop from mine box to manhole	0.78	0.78	Weston Design

Distribution Manhole	Placed Relative to Sump		Weston Design 9/30/15	
	Elevation (TCI revised)	Elevation (Goff)	Elevation (TCI revised)	Elevation (Goff)
Top of Manhole	11438.56	11440.31	11436.34	11438.09
Manhole inlet invert	11435.57	11437.32	11433.35	11435.10
Manhole inlet invert to discharge pipe invert	2.50	2.50	2.50	2.50
Manhole discharge invert	11433.07	11434.82	11430.85	11432.60
Pipe length from manhole to valve	20.00	20.00	20.00	20.00
Slope manhole to valve pipe	0.01	0.01	0.01	0.01
Elevation drop from manhole to valve	0.20	0.20	0.20	0.20
Elevation of valve invert needed	11432.87	11434.62	11430.65	11432.40
Actual Valve invert	11435.70	11437.45	11435.70	11437.45
Difference	2.83	2.83	5.05	5.05
	<u>Notes</u> Relative manhole elevation Very shallow pipe No grading top of waste pile		<u>Notes</u> Hard manhole elevation Deeper pipe Grading at top of waste pile	

## Gold King Elevation Notes

<b>Description</b>	<b>Elevation (TCI 10/?/15)</b>	<b>Elevation (TCI 9/23/15)</b>	<b>Elevation (Goff)</b>
Goff East Control Point	11438.13	11378.07	11439.86
BM-1	11443.75	11383.70	11445.49
BM-2	11449.13	11389.07	11450.86
Top of Timber (now removed)	11447.03	11386.98	11448.77
Floor (location not clear)		11378.73	11440.52
Bolt (listed on Elliot's notes)	11439.69	11379.22	11441.01
Floor of mine below BM2	11437.67	11377.20	11438.99
Elevation drop Pipe invert below floor of mine			1.32
Mine box invert		11375.88	11437.67
Pipe length from mine box to manhole			78
Slope od pipe from mine box to manhole			0.01
Elevation drop from mine box to manhole			0.78

	<b>Placed Relative to Sump</b>	
Top of Manhole		11439.88
Manhole inlet invert	11375.10	11436.89
Manhole inlet invert to discharge pipe invert		2.5
Manhole discharge invert	11372.60	11434.39
Pipe length from manhole to valve		20
Slope manhole to valve pipe		0.01
Elevation drop from manhole to valve		0.2
Elevation of valve invert needed	11372.40	11434.19
Actual Valve invert	11375.23	11437.02
Difference		2.83

**Notes**

	1.74	60.05
	1.74	60.05
On plate in adit rib	1.74	60.05
	1.74	60.05
	1.32	60.47
This is a surveyed relative elevation based on a bolt at 11441.01	1.32	60.47
??		
Sump?		

Weston	
Weston Design Survey Notes	
Sketch 9/24/15	9/30/15
11441.11	11438.09
11438.12	11435.10
2.5	2.5
11435.62	11432.60
20	20
0.01	0.01
0.2	0.2
11435.42	11432.4

This is a surveyed relative elevation based on a bolt at 11441.01

1.74

1.74

1.74

1.74

1.32

Floor of mine below BM2	11437.67	This is a surveyed relative elevation based on a bo
Elevation drop Pipe invert below floor of mine	1.32	
Mine box invert	11436.35	
Pipe length from mine box to manhole	78	
Slope od pipe from mine box to manhole	0.01	
Elevation drop from mine box to manhole	0.78	
Manhole inlet invert	11435.57	
Manhole inlet invert to discharge pipe invert	2.5	
Manhole discharge invert	11433.07	
Pipe length from manhole to valve	20	
Slope manhole to valve pipe	0.01	
Elevation drop from manhole to valve	0.2	
Elevation of valve invert needed	11432.87	
Actual Valve invert	11435.7	This is a surveyed relative elevation based on a bo
Difference	2.83	



lt at 11439.69

lt at 11439.69

TCI Point list from Weston 10/10/15 6pm

210	1454200.247	2382991.087	11443.75BM-1	#6 rebar on flat spot to left of por
211	1454216.441	2383057.843	11449.13BM-2	split set in rib on right hand side o
212	1454117.77	2383122.715	11438.13WP-1 1" CAP GOFF	Replacement point by Goff after F
5043	1454512.36	2383397.23	11714.59GCP 3 GOLFF	On hill well above portal
6525	1454153.9	2382995.964	11435.70END OF PIPE	
6526	1454154.458	2382993.36	11436.39TOP OF PIPE	
6527	1454154.782	2382992.003	11436.54VACUUM	
6528	1454155.344	2382989.374	11436.17TOP OF PIPE	
6529	1454165.639	2382975.25	11435.64TOP OF PIPE	
6530	1454150.435	2383015.617	11439.5720 FT FROM VALVE	
6531	1454152.65	2383019.524	11439.69BOLT	Removed
6532	1454145.715	2383019.77	11439.41	3
6533	1454146.055	2383012.049	11439.65	3
6534	1454155.455	2383013.356	11439.67	3
6535	1454151.823	2383021.616	11439.60	3
6536	1454099.848	2383163.456	11431.61TOP OF PIPE	
6537	1453939.291	2382426.037	11310.77GCP-1/1" CAP GOEFF	By guard shack on road to Gold K

Northing and Easting is not in Goff System

tal  
f portal ~30' into portal  
ND....was destroyed

ing

12954149.05183009.115	11431.06	MANHOLE INV
130454148.9683009.133	11438.06	MANHOLE LID
13154148.23883007.497	11437.65	MANHOLE BOX
13254151.53183010.822	11437.75	MANHOLE BOX
13354151.55583007.594	11437.69	MANHOLE BOX
13454148.46383011.191	11437.6	MANHOLE BOX
135454154.0682995.625	11434.48	GATE VALVE NUT
13654154.08382995.525	11437.33	GATE VALVE
13754155.30482992.405	11436.37	AIR VALVE
13854155.25982992.204	11437.09	AIR VALVE LID

101453939.31382426.07	11310.73	GCP1 TS
102453972.53383198.27	11375.92	GCP2 TS
103454512.36383397.23	11714.59	GPC3 TS
104454501.98382475.97	11386.75	GCP4 TS
105454175.17382922.06	11436.87	GCP5 TS
106454330.11382653.75	11387.02	GCP6 TS
1000454143.03382945.51	11437.43	WP1000-60D
1001454170.262383010.4	11442.42	WP1001-60D
21054200.24782991.087	11443.75	BM-1
21154216.44183057.843	11449.13	BM-2
212454117.7783122.715	11438.13	WP-1 1" CAP GOFF